

TABLE 8

ANTI-HA ANTIBODIES IN SERA OF MICE IMMUNIZED WITH HA ENTRAPPED IN LIPOSOMES										
HA FORMULATION	DOSE/0.5 ml/INOCULUM		4 week		6 week		8 week		12 week	
	PROTEIN (ug),	LIPID (mg)	EIA	HAI	EIA	HAI	EIA	HAI	EIA	HAI
Non-Entrapped	5.0	—	26	29	516	557	301	368	198	320
	0.5	—	3	9	205	243	126	211	57	106
MLV, CHST, H	5.0	13.6	891	761	7062	7241	2170	3044	1581	1318
	0.5	1.4	52	33	2655	2941	1018	1237	557	640
MLV, CHST, L	5.0	1.9	147	92	3886	5553	3055	1810	1166	1191
	—	—	—	—	—	—	—	—	—	—
SPLV, DMPC/C, H	5.0	9.7	123	80	2204	1940	1548	1470	776	640
	0.5	1.0	22	23	387	399	233	243	136	121
SPLV, DMPC/C, L	5.0	2.9	101	89	1766	1810	1042	1613	767	905
	—	—	—	—	—	—	—	—	—	—

A/Liposomes (MLV, SPLV) were prepared with either 500 mg (H) or 50 mg (L) of lipid (CHST or DMPC/C, 70:30 mole percent)

B/Geometric mean titer (n-51) determined by enzyme-linked immuno assay (EIA) and hemagglutination inhibition (HAI)

We claim:

1. A method of potentiating an immune response in an animal which comprises administering to the animal a dosage form comprising:

(a) a liposome which comprises:

- (i) a lipid consisting essentially of an organic acid derivative of a sterol; and,
- (ii) an antigenic peptide; and,

(b) a pharmaceutically acceptable carrier,

wherein said organic acid is selected from the group consisting of a carboxylic, dicarboxylic, polycarboxylic, hydroxy, amino and polyamino acid attached to said sterol at a hydroxyl group by an ether or ester linkage, and wherein the liposome is present in the dosage form in an immunization dose.

2. The method of claim 1, wherein the animal is a human.

3. The method of claim 1, wherein the liposome is a multilamellar liposome.

4. The method of claim 1, wherein the liposome has a size of about 1 micron.

5. The method of claim 1, wherein the sterol is cholesterol.

6. The method of claim 1, wherein the organic acid is a dicarboxylic acid having up to seven carbon atoms.

7. The method of claim 6, wherein the acid is succinic acid.

8. The method of claim 1, wherein the organic acid is citric acid.

9. The dosage form of claim 1, wherein the sterol comprises a salt form of the organic acid.

10. The dosage form of claim 9, wherein the salt form is a tris(hydroxymethyl)aminomethane salt.

11. The method of claim 1, wherein the antigenic peptide is a viral peptide.

12. The method of claim 1, further comprising administering an immunomodulator to the animal.

13. The method of claim 12, wherein the immunomodulator is a cytokine.

14. The method of claim 1, wherein the sterol is cholesterol hemisuccinate.

15. The method of claim 14, wherein the salt form is the tris salt of cholesterol hemisuccinate.

16. The method of claim 14, wherein the immunogen is a viral peptide.

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